

***Apodia bifractella* (Duponchel, [1843]) (Lepidoptera, Gelechiidae), new to the Japanese fauna**

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Abstract *Apodia bifractella* (Duponchel) which is familiar in the western part of the Palearctic region is found from Japan for the first time. On the basis of Japanese specimens, it is redescribed and illustrated in detail.

Key words *Apodia bifractella* (Duponchel), Gelechiidae, new record, Japan.

The genus *Apodia* Heinemann, 1870 was described as monotypic and is known to have a broad distribution over the western part of the Palearctic region. The genus, however, has been insufficiently revised and has never been found in east Asia so far. From Hokkaidô one of us (H. Kogi) recently found a gelechiid moth which was unfamiliar in Japan. Then, we examined it in detail and identified it as *Apodia bifractella* (Duponchel). We record *Apodia bifractella* (Duponchel) from Japan for the first time here, and redescribe and illustrate it in detail on the basis of the Japanese specimens.

Genus *Apodia* Heinemann

Apodia Heinemann, 1870, *Schmett. Dtl. Schweiz* (2) 2 (1): 286. Type species: *Lita bifractella* Duponchel, [1843] 1842, by monotypy.

Remarks. This genus was described as monotypic by Heinemann (1870), since when some species have been added by some other authors, Ptrey (1911), Cherétien (1908) and so on. But the genus has not been sufficiently revised including the subsequently added species. Heinemann (1870) diagnosed the genus mainly based on the shape of labial palpus and wing venation, but at present we can easily distinguish the genus by the unique genitalia of the male. Although the shape of the male genitalia indicates the close relationship to the genus *Metzneria*, *Apodia* is clearly discriminated from the latter by the male and female genitalia. In the male genitalia, the slightly lobed uncus, the sickle-shaped valva and the oval sacculus are broadly similar to those of *Isophrictis* and some members of *Metzneria*, whereas the largely swelling saccus and the long cylindrical aedeagus without cornuti are well discernible characters from the latter two genera. In the female genitalia, the extremely small ovipositor and absence of signum are good characters to discriminate the genus from the latter two.

Apodia bifractella (Duponchel)

Lita bifractella Duponchel, [1843] 1842, in Godart and Duponchel, *Hist. nat. Lépid. Papillons Fr.* (Suppl.) 4: 292, pl. 74, fig. 13.

Gelechia bifractella: Douglas, 1850, *Trans. ent. Soc. Lond.* (2) 1: 66.

Anacamptis bifractella: Herrich-Schäffer, 1853, *Schmett. Eur.* 5: 196.

Apodia bifractella: Heinemann, 1870, *Schmett. Dtl. Schweiz* (2) 2 (1): 286; Benander, 1935, *Ent. Tidskr.*

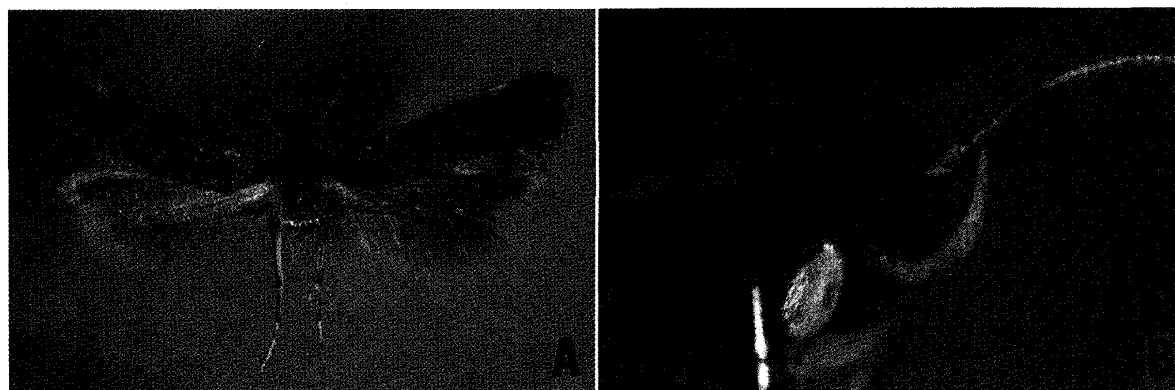


Fig. 1. Dried specimen of adult *Apodia bifractella* (Duponchel), ♀, Hamakosimizu, Kosimizu Town, 30. viii. 1996, S. Kawahara leg. A: wing markings, B: lateral view of face and labial palpus.

56: 110.

Aristotelia bifractella: Meyrick, 1925, *In* Wytzman, *Genera Insect.* **184**: 42.

Isophrictis bifractella: Pierce & Metcalfe, 1935, *Genitalia tineid Families Lepid. Br. Isls*: 2, pl. 1.

♂ ♀. Expanse of wings 12.5–13.1 mm. Length of forewing 5.8–6.1 mm.

Face ochre; head ochreous-orange. Ocellus distinct, posterior to antennal scape. Labial palpus (Fig. 1B) recurved, somewhat short, variable in colour, being ochre without markings, ochreous-orange with 2nd segment darkened ventro-laterally, or ochreous-orange with a white band on apex of 2nd segment; terminal segment 5/6 as long as 2nd one. Antenna filiform, 1/2 as long as forewing, brownish fuscous, ringed with ochre on basal half of each segment. Neck plumes somewhat rough, orange. Thorax smooth, dark fuscous with a little gloss, sprinkled with orange scales. Legs fuscous, wholly sprinkled with ochre scales; apex of each segment of tarsi whitish ochre; apex of mid tibia ochre with a pair of fuscous calcaria; hind tibia with a whitish ochre band at apex, with a pair of fuscous calcaria at middle and also at apex, and with some ochre hairy scales dorsally.

Forewing (Fig. 1A) cupreous-fuscous, sprinkled with some ochre scales, with a yellow speck at apical 1/3 of costa and also at tornus. An orange fascia drawing an arc from the costal yellow speck to disc, and also from the tornal speck to disc; the latter fascia joining the former one on disc. An orange streak occupying distal 1/6 of radial stem. Two irregular blotches of orange occupying distal 2/7 and middle 1/7 of plica. Similar blotch occurring in basal 1/6 of ventrum. Cilia cupreous fuscous, with a slender terminal line of ochre. Hindwing and its cilia fuscous.

Abdomen dark fuscous dorsally, becoming paler ventrally, with some ochre scales at caudal end, and with a lateral longitudinal streak of ochre.

Male genitalia (Fig. 2). Uncus poorly sclerotized, slightly bilobed, with a short seta at apex of lobe. Gnathos absent. Valva sharp sickle-shaped on apical half, with many long and thick setae inside; basal half of valva forming a semicircular blade, with a large sacculus ventrally; sacculus poorly sclerotized, oval, flattened, constricted basally, with numerous long setae and short ones on almost whole surface of inside. Saccus broadly swelling, forming a subtriangular lobe. Aedeagus cylindrical, gently recurved at middle, 3 times as long as saccus, becoming narrower towards apex, with collar like sclerotization at apex, and with a little oval swelling at base; cornuti absent.

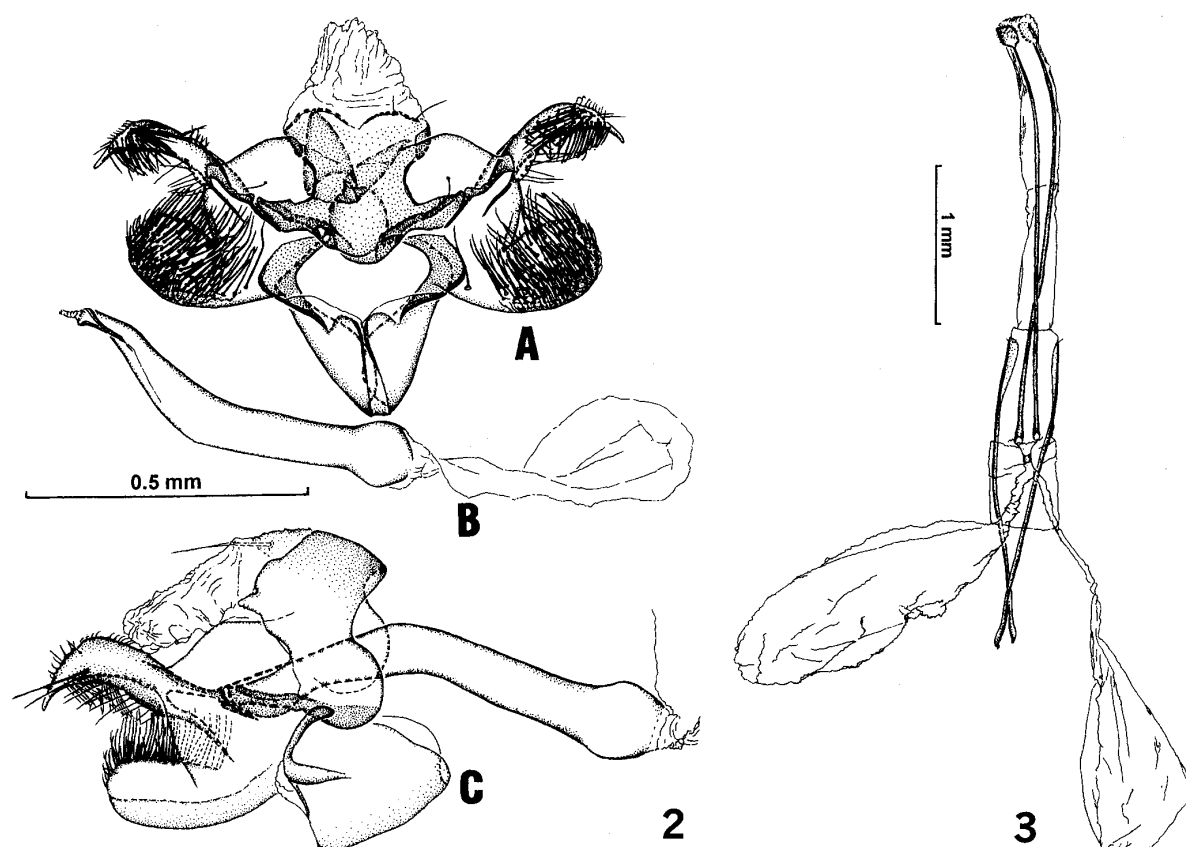


Fig. 2. Male genitalia of *Apodia bifractella* (Duponchel) (Gen. sl. no. Gel-98005). A: caudal view, valva expanded and aedeagus removed, B: aedeagus, C: lateral view.

Fig. 3. Ventral view of female genitalia of *Apodia bifractella* (Duponchel) (Gen. sl. no. Gel-98004).

Female genitalia (Fig. 3). Papilla analis weakly sclerotized, very small and short; some minute setae occurring on almost whole surface; apophysis posterioris slender, longer than 15 times length of papilla analis. Eighth abdominal segment moderate in length, weakly sclerotized laterally, with some short setae along caudal margin; apophysis anterioris slender, 1/2 times as long as apophysis posterioris. Ostium bursae membranous; ductus bursae narrow, moderate in length; cestum shorter than 1/20 length of ductus bursae, being near ostium; ductus seminalis opening cephalic to cestum distinctly, short, with large wrinkled bulla seminalis; corpus bursae pyriform, membranous, without signa.

Specimens examined. Hokkaidô: 1 ♀, Minehama, Syari Town, 7. viii. 1994, H. Kogi leg.; 1 ♀, Hamakosimizu, Kosimizu Town, 30. viii. 1996, S. Kawahara leg. (Gen. sl. no. Gel-98005); 2 ♂, Yûhutu, Tomakomai City, 3. viii. 1995, H. Kogi leg. (Gen. sl. no. Gel-98004).

Distribution. Europe, North Africa, Asia Minor, Russia, Japan (Hokkaidô).

Host plants. *Pulicaria dysenterica*, *Inula conyza*, *Aster tripolium* (Compositae) are recorded in Europe, unknown in Japan.

Biology. In Europe, eggs are probably laid on seeds in late summer. Larvae grow and overwinter on seeds from autumn to the next spring. They pupate in late spring or in early summer, and then emerge in mid summer. Adults are found on the flowers of the hostplant in the evening.

Remarks. This species is newly recorded from Japan. Among the Japanese species of the Gelechiidae, *Apodia bifractella* (Duponchel) is easily recognized merely by its superficial coloration because of absence of similar species.

Recently, Karsholt (1995) mentioned the problem of differentiating between *Apodia bifractella* and *A. martinii* Petry, 1911 and showed the male genitalia of the lectotype of the latter. The male genitalia of the lectotype of *A. martinii*, however, are not qualitatively different from those of *A. bifractella*. The latter species is very similar to the former, but might be distinguished by its forewing which is darker due to fewer orange scales sprinkled and is broader than that of the former. Moreover, he mentioned the biological difference between them. On this occasion, we sent some pictures of the Japanese specimens to him, and then he kindly told us that the Japanese ones looked like *A. bifractella*.

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References

- Cherétien, P., 1908. Description de nouvelles Géléchides d'Algérie [Lep.]. *Bull. Soc. ent. Fr.* **1908**: 140-144.
- Heinemann, H. von, 1870. *Die Schmetterlinge Deutschlands und der Schweiz* (2) **2** (1). 825 pp. Braunschweig.
- Karsholt, O., 1995. Kommentiertes Verzeichins der Symmocidae, Blastobasidae und Gelechiidae Ostdeutschlands (Lepidoptera). *Beitr. Ent.* **45**: 137-154.
- Petry, A., 1911. Eine neue *Apodia*-Art aus Thüringen. *Dt. ent. Z. Iris* **25**: 99-101.

摘 要

エゾキバガ (新称), 日本からの新記録 (坂巻祥孝・小木広行)

北海道において著者のひとりが採集した標本の中に見慣れないキバガが混ざっていたので、詳しく調べたところ日本初記録となるエゾキバガ, *Apodia bifractella* (Duponchel) であるとわかった。本属は旧北区西部 (ヨーロッパ, 北アフリカ, 小アジア, ロシア) では、前世紀からよく知られた属であるが、東アジアでの分布は未知で、この記録が属としても新記録となる。本属は、交尾器形態などからは *Metzneria* 属に近縁と考えられるが、暗色の外見のみでも明らかに区別できる。日本での幼虫は未知であるが、ヨーロッパでは秋から冬にキク科のシオン属, オグルマ属, *Pulicaria* 属の種子を食害し、そのまま越冬、翌夏羽化するという。

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